

## ANNOTATIONES ZOOLOGICAE JAPONENSES

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## The Fauna of Akkeshi Bay

## XIV. Solenogastre

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The first reference to the Japanese Solenogastres is found in the work of Heath, who in 1911 described eight new species which had been taken in the Pacific during the Japanese Expedition of the U. S. Fish Commission Steamer "Albatross." Recently Baba (1939) discovered another species of Solenogastre, *Epimenia verrucosa*, from Amakusa, South Japan. Thus up to the present time the following nine species are recorded from Japan.

Species	Depth (in faths)	Locality
1) <i>Chaetoderma japonica</i>	207-250	Off Oigawa
2) <i>Driomenia pacifica</i>	65-125	Osé Zaki; Kagoshima Gulf
3) <i>Strophomenia farcimen</i>	73-200	South of Honshu
4) <i>St. ophidiana</i>	52-77	" "
5) <i>St. regularis</i>	63-100	" "
6) <i>St. spinosa</i>	73-200	" "
7) <i>St. triangularis</i>	65-125	" "
8) <i>Halomenia gravida</i>	229	Kurile Islds., near Simushir
9) <i>Epimenia verrucosa</i>	22-33	Amakusa

In the course of my study on the fauna of the polychaetous annelids dredged off Akkeshi Bay, I had fortunately found a single solenogastre mixed with some Maldanid worms, collected from the depth of 30 fathoms by a dredging apparatus. The Solenogastre was undoubtedly ascribed to the genus *Chaetoderma*. Heath (1911) has formerly reported four species of the same genus from Alaska, four from northern California and one from southern Japan. The present specimen from Akkeshi Bay

could not be identified with any known species recorded by Heath and others, and it has been diagnosed as follows.

*Chaetoderma akkesiensis* sp. nov.

One specimen of this species was dredged off Akkeshi Bay at a depth of 30 fathoms. The body is cylindrical, measuring 16.3 mm in length. The body colour was silvery white in a preserved state. The buccal plate is subelliptical, broader than long, with the length of 0.7 mm and 0.4 mm through the transverse and longitudinal axes respectively. The slit-like mouth opens near the central portion. The prothorax is swollen at the anterior portion and tapers gradually backwards, and is deeply demarcated from the metathoracic region. It measures 1.6 mm in length by 1.1 mm at the widest portion and 0.8 mm at the narrowest region. Behind the prothorax there is no marked boundary between the metathorax and the abdomen, but the body widens gradually towards the middle body region and tapers again posteriorly. The anterior portion of the metathorax has 0.93 mm breadth and the posterior widest portion 1.2 mm.



Fig. 1. *Chaetoderma akkesiensis* n. sp. Entire animal.  $\times 6$ .

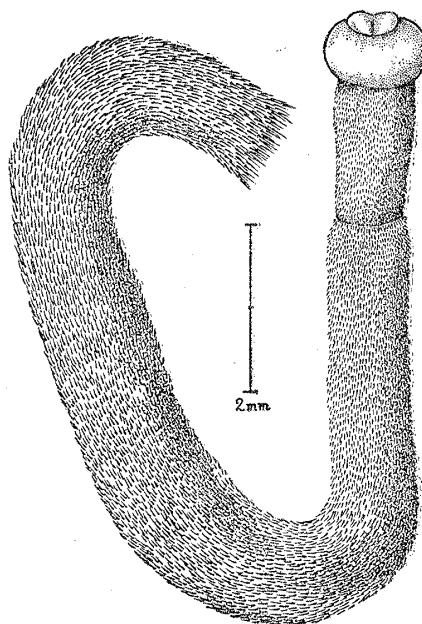


Fig. 2. *Chaetoderma akkesiensis* n. sp. Entire animal.

The spicula of the prothorax can be divided into 2 types: one consists of a typical spicula as is commonly found all over the entire body. The spicula of this type are flat and broad, imbricated, with broad base and somewhat tapered. They are finely striated transversely with a median

longitudinal axis with a pair of similar striations attaining half way the entire length. The spicula of the another type are minute measuring 0.045 mm. They are short, club-shaped with slightly bifurcated base as is shown in fig. 4, a-b. These spicula are only found in the prothorax and are characteristic of the species. In the posterior portion of the prothorax the spicula become more or less slender bearing a median axis only. Behind the prothorax the spicula become gradually longer. Fig. 4, f is shown the spicule taken from the middle body. It measures 0.2 mm in length. At the posterior end a number of long, thin spicula occur. They are slender, elongated with 0.37 mm long.

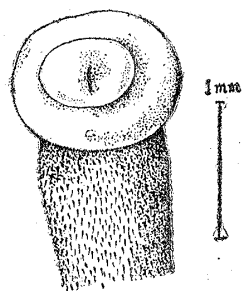


Fig. 3. *Chaetoderma akkesiensis* n. sp. Anterior end.

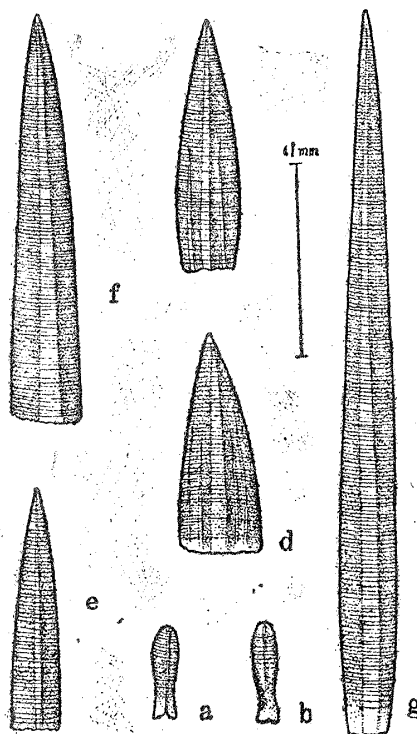


Fig. 4. *Chaetoderma akkesiensis* n. sp. Various spicula. a-b, Club-shaped spicula from prothorax; c-d, Typical spicula from the same; e, Spicule from preabdomen; f-g, Spicula from posterior body.

Owing to a scanty material I can give very unsatisfactory information as to the internal structure. The mouth opening is situated about the centre of the frontal sense organ and is remarkable for its minuteness. Around the mouth opening there is a broad cuticles which is almost subelliptical in shape. From here to the region of the radula the canal is comparatively short and small. The radula was cut obliquely and it

is therefore somewhat difficult to determine its exact relations. The conical tooth appears to be relatively small, but the cuticular wing-like supports and musculature are as usually shown in other species. The body wall, including muscular, hypodermal and cuticular layers, is typically located. The epithelial linings consists of high columnar cells with basal nuclei. The walls of the digestive tract from the prothorax to the anterior part of the abdomen is relatively thin having the low epithelial cells. The stomach is spacious and situated in the middle body. Beyond this point the relations of intestine and liver require no detailed description. The gills, which are broad and short contain about 10 gill lamellae. The single specimen was female. The gonad, with the usual characteristics, opens into the pericardium by means of very short dorso-ventrally compressed tubes separated by the aorta.

The present species differs in the first place from the known species of *Chaetoderma* on account of the spicula found in the prothorax. The prothorax of the present species is cylindrical and is distinctly marked from the metathorax. Excepting the occurrence of the club-shaped spicula, the general characteristics of the species have some resemblance to *Ch. montereyensis*. *Ch. japonica* has a shield-like buccal plate and the spicula of an usual type.

In conclusion I wish to express my best thanks to Prof. Dr. K. Hirasaka and Dr. K. Baba for their kindness for consulting literature.

#### LITERATURE

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